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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: OOI et al.

SERIAL NO.: 09/802,084 EXAMINER:

FILING DATE: 03/08/2001 ART UNIT:

TITLE: QUANTUM WELL INTERMIXING

ATTORNEY DOCKET NO.: 774-010234-US(PAR)

The Commissioner of Patents and Trademarks
Washington, D.C. 20231

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Dear Sir:

The following information is being disclosed to the Patent and Trademark Office as information that may be material to the examination of the above-identified patent application.

This Supplemental Information Disclosure Statement is being filed within three months of the filing date of the above-identified patent application. Thus, a certification under 37 CFR 1.97(e) or fee under 37 CFR 1.17(p) is not required for the information herein to be considered.

The above-identified patent application claims priority to PCT International Patent Application Nos.: PCT/SG 00/00039 filed 8 March 2000, PCT/SG 00/00038 filed 8 March 2000, Singaporean Patent Application No. 200004786-0 filed 11 September 2000 and Singaporean Patent Application No. 200004787-8 filed 11 September 2000. Applicants' attorney encloses copies of a European Search Report issued on the priority PCT International Patent Application No. PCT/SG 00/00038 and a PCT International Search Report issued on the priority PCT International Patent Application PCT/SG 00/00038 and a PCT International Search Report issued on the priority PCT International Patent

Application PCT/SG 00/00039. The European Search Report cited European Patent Application No. EP 0731387, PCT International Publication No. WO 96/27226, "Plasma Immersion AR+ ION Implantation Induced Disorder in Strained Ingaasp Multiple Quantum Wells", Lam et al., 1998, Electronics Letters, GB, IEE Stevenage, vol. 34, no. 8, pages 817-818, and "Integration Process for Photonic Integrated Circuits Using Plasma Damage Induced Layer Intermixing", OOI et al., 1995, Electronics Letters, GB, IEE Stevenage, vol. 31, no. 6, pages 449-450.

The PCT International Search Report, issued on the priority PCT International Patent Application No. PCT/SG 00/00038, cited United States Patent No.: 6,027,989; "Band-Gap Tuning of InGaAs/InGaAsP/InP Laser Using High Energy Ion Implantation", Charbonneau et al., 1995, Applied Physics Letters, American Institute of Physics, vol. 67, no. 20, pages 2954-2956; "Polarization Insensitive InGaAs/InGaAsP/InP Amplifiers Using Quantum Well Intermixing", He et al., 1996, Applied Physics Letters, vol. 69, no. 4, pages 562-564; "Bandgap Tuning of Semiconductor Quantum Well Structures Using ION Implantation", Piva et al., 1994, Superlattices and Microstructures, GB, Academic Press, vol. 15, no. 4, pages 385-389 and European Patent Application Nos.: EP 0731387.

The PCT International Search Report, issued on the priority PCT International Patent Application No. PCT/SG 00/00039, cited "Integration Process for Photonic Integrated Circuits Using Plasma Damage Induced Layer Intermixing", OOI et al., 1995, Electronics Letters, GB, IEE Stevenage, vol. 31, no. 6, pages 449-450; "Polarization Insensitive InGaAs/InGaAsP/InP Amplifiers Using Quantum Well Intermixing", He et al., 1996, Applied Physics Letters, vol. 69, no. 4, pages 562-564; "Plasma Immersion AR+ ION Implantation Induced Disorder in Strained Ingaasp Multiple Quantum Wells", Lam et al., 1998, Electronics Letters, GB, IEE Stevenage, vol. 34, no. 8, pages 817-818; PCT International Publication No. 96/27226 and European Patent Application No. EP 0731387.

Applicants' attorney also encloses copies of "Plasma Vacuum Ultraviolet Emission in a High Density Etcher", Cismaru et al, 1994, 4th International Symposium on Plasma Process-Induced Damage, pages 192-195; "Structural Imperfections in Silicon Dioxide Films Identified with Vacuum Ultraviolet Optical Absorption Measurements", Awazu et al., 1991, Appl. Phys. Letters, vol. 59, no. 5, pages 528- 530; "Effect of Ion Beam and electron Cyclotron Resonance Etch-Induced Damage on the Optical Properties of Multiple quantum Well Structures", Bensaoula et al., 1994, J. Appl. Phys., vol. 75, no. 6, pages 2818-2822; "Effect of Zinc Impurity-Induced Disordering on the Refractive Index of GaAs/AlGaAs Multiquantum Wells", Han et al., 1994, Appl. Phys. Letters, vol. 64, no. 6, pages 760-762; "Ultralow Damage Depth by Electron Cyclotron Resonance Plasma Etching of GaAs/InGaAs Quantum Wells", Bickl et al., 1993, Appl. Phys. Letters, vol. 62, no. 10, pages 1137-1139; "Electron Cyclotron Resonance Plasma-Induced Damage in AlGaAs/GaAs/AlGaAs Single Quantum Wells", Swaminathan et al., 1991, Appl. Phys. Letters, vol, 58, no.12, pages 1256-1258; "Plasma Vacuum Ultraviolet Emission in an Electron Cyclotron Resonance Etcher", Cismaru et al., 1999, Appl. Phys. Letters, vol. 74, no. 18, pages 2599-2601 and European Patent Application No. EP 0812485 , which were provided by the applicants and may be considered relevant to the invention claimed in the above-identified application.

Copies of the European Search Report, two PCT International Search Reports and the cited references are enclosed together with PTO-Form 1449.

Respectfully submitted,

15 May 01

Clarence A. Green Reg. No.: 24,622 Date

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CERTIFICATE OF MAILING

I hereby certify that the attached Supplemental Information Disclosure Statement, European Search Report, two PCT International Search Reports, PTO-Form 1449 and references are being deposited with the United States Postal Service as first class mail on the date shown below in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231.

5/15/01
Date

Deborah J Clark
Name of Person Making Deposit